ACTION REPORT
STATE WATER CONTROL BOARD MEETING
THURSDAY, OCTOBER 25, 2007

House Room C
General Assembly Building
9th & Broad Streets
Richmond, Virginia

Convene – 9:30 AM

Board Members Present:

W. Shelton Miles, III, Chair	Michael McKenney
Komal K. Jain, Vice-Chair (arrived at 9:50 a.m.)	Thomas D. C. Walker
Robert H. Wayland, III	W. Jack Kiser
John B. Thompson	

Department of Environmental Quality:

David K. Paylor, Director	Cindy M. Berndt

Attorney General's Office:
Al Albiston

Convene – 9:35 AM, Closed Session at 12:00 p.m., End of Closed Session and Certification at 1:00 p.m. and Adjourned at 3:30 p.m.

Final Regulation

Fast-Track Rulemaking to Amend the Water Quality Management Planning Regulation and the General VPDES Watershed Permit Regulation and Total Nitrogen and Total Phosphorus Discharges And Nutrient Trading in the Chesapeake Bay Watershed	Approved Fast Track

TMDLs

Potomac River TMDL Polychlorinated Biphenyl (PCB) Report To EPA Region 3	Approved TMDL

Permits

VEPCO North Anna VPDES Permit Reissuance	Approved Permit

Closed Session – Captain's Cove Appeal

Reports

Drought Report	Received Report

"FAST TRACK" RULEMAKING TO AMEND: 9 VAC 25-720-120.C. (WATER QUALITY MANAGEMENT PLANNING REGULATION, YORK RIVER BASIN NUTRIENT WASTE LOAD ALLOCATIONS); AND 9 VAC 25-820-10, -820-20 AND -820-70 (GENERAL VPDES WATERSHED PERMIT REGULATION FOR TOTAL NITROGEN AND TOTAL PHOSPHORUS DISCHARGES AND NUTRIENT TRADING IN THE CHESAPEAKE BAY WATERSHED):

Staff will ask the Board to approve amendments to the Water Quality Management Planning Regulation (9 VAC 25-720) and the General VPDES Watershed Permit Regulation for Total Nitrogen and Total

Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed (9 VAC 25-820-10 and 820-20). The total nitrogen and total phosphorus waste load allocations (WLAs) for the Hanover County-Doswell Wastewater Treatment Plant (VA0029521) would be revised to exclude the portions attributable to Bear Island Paper Company, with separate WLAs added for Bear Island Paper. The Doswell WWTP and Bear Island Paper operate independent wastewater treatment facilities. Hanover County holds the discharge permit for the combined discharges (Bear Island Paper shares the outfall). These revisions will make Bear Island Paper accountable for their own nutrient discharges and eligible to participate in the Nutrient Credit Exchange Program.

At the Board's November 21, 2005 meeting, nutrient waste load allocations (WLAs) were adopted for significant dischargers in the York River basin. The basis for the allocations was a combination of each facility's design flow coupled with stringent nutrient reduction treatment. The Doswell WWTP was assigned nutrient WLAs based on these values:

Facility	Design Flow (MGD)	Annual Avg TN Concentration (mg/L)	**TN WLA (lbs/yr)**	Annual Avg TP Concentration (mg/L)	**TP WLA (lbs/yr)**
Doswell WWTP	1.0	6.0	**18,273**	0.7	**2,132**
Bear Island Paper	4.2	3.7	**47,328**	1.0	**12,791**
TOTALS	5.2		**65,601**		**14,923**

Bear Island Paper has requested a separate listing of their nutrient WLAs to allow participation in the Nutrient Credit Exchange Program, authorized under Virginia Code §62.1-44.19:12 through 19:19. The proposed revisions to 9 VAC 25-720-120.C. would satisfy the request, in conjunction with the proposed amendments to 9 VAC 25-820-10 and 820-20, described in the following sections.

Facilities eligible to participate in the Nutrient Credit Exchange Program include those with WLAs listed in the Water Quality Management Planning Regulation (9 VAC 25-720) as of January 11, 2006. Bear Island Paper's WLAs are contained within the WLAs assigned to the Doswell WWTP; for Bear Island Paper to be eligible to participate in the Nutrient Credit Exchange Program their WLAs must be listed separately.

The proposed amendments to 9 VAC 25-820-10 and 820-20 will define certain industrial plants, not holding an individual VPDES permit, as existing facilities eligible to exchange nutrient credits. The revised definition, coupled with the separate WLAs proposed above in 9 VAC 25-720.120.C., would satisfy the conditions sought by Bear Island Paper -- an industry which holds a separate WLA in the Water Quality Management Planning Regulation but does not hold an individual VPDES permit authorizing its discharge.

SUBSTANCE OF PROPOSED AMENDMENTS

A. Water Quality Management Plan Regulation; 9 VAC 25-720-120.C. - York River Basin, Nitrogen and phosphorus waste load allocations to restore the Chesapeake Bay and its tidal rivers.
   For the **Doswell WWTP** (VA0029521), revise the total nitrogen waste load allocation figure from **65,601** to **18,273** pounds per year, and the total phosphorus waste load allocation figure from **14,923** to **2,132** pounds per year. Add to the listing **Bear Island Paper Company**, with a total nitrogen waste load allocation figure of **47,328** pounds per year, and a total phosphorus waste load allocation figure of **12,791** pounds per year.
B. General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed; 9 VAC 25-820:
   1. Section 820-10 – In the definitions, add the following to "Existing Facility": …"*shall also mean and include any facility which holds a separate waste load allocation in 9VAC25-720-120 C of the Water Quality Management Planning Regulation but does not hold an individual VPDES permit authorizing its discharge*".
   2. Sections 820-20 and -820-70 – Where applicable, add references to the revised definition of "Existing Facility".

BOARD APPROVAL FOR SUBMITTING THE POTOMAC RIVER TMDL POLYCHLORINATED BIPHENYL (PCB) REPORT TO EPA REGION 3 FOR THEIR REVIEW AND APPROVAL .

Executive Summary

An inter-state Total Maximum Daily Load (TMDL) for polychlorinated biphenyls (PCBs) was

developed for 28 listed impairments in the tidal Potomac and Anacostia rivers. Nineteen of these impairments are located in Virginia tidal Potomac embayments, five in the District and four in Maryland. The TMDL was in direct response to the issuance of fish consumption advisories by the Virginia Department of Health and the District of Columbia and Maryland agencies due to elevated levels of PCBs found in fish tissue. The TMDL objective is to ensure that the "fish consumption" use is protected and thus the TMDL was developed to: 1) meet the water quality criteria; and, 2) result in fish tissue PCB concentrations that do not exceed the fish tissue threshold for advisories.

A consent decree was entered into by the EPA and the U.S. District Court (Kingman Park Civic Association, et al. v. U.S. Environmental Protection Agency, et al, No. 1:98CV00758 (D.D.C.)) that required the District of Columbia to complete a PCB TMDL by September 30, 2007. An extension was granted until October 31, 2007 for final submission. Maryland and Virginia were not required to complete their PCB TMDLs by this date. However, all parties recognized early-on that none of the jurisdictions could develop an approvable TMDL in isolation due to the constant exchange of waters, pollutants and living resources across jurisdictional boundaries. Therefore, a joint TMDL was considered advantageous because it would: 1) help meet the CD requirements by developing a defensible TMDL, 2) provide greater cost efficiency in developing the TMDL, and 3) avoid public confusion with three independent TMDLs for the same waterbody.

Maximum allowable PCB loads were identified in the TMDL for seven source categories:

- Potomac River fall line at Chain Bridge,
- major tributaries that flow into the tidal Potomac River,
- direct drainage from land adjacent to the tidal Potomac,
- wastewater treatment plant discharge (WWTP),
- combined sewer overflows (CSOs),
- atmospheric deposition to tidal surface water, and
- runoff associated with contaminated/remediated sites.

In order to meet the TMDL objective, a site specific PCB water target was developed and PCB reductions were assigned to each of the source categories, ranging from 28% to 98%. The jurisdictions agreed to proceed with an adaptive implementation approach that would include additional data gathering along with activities to reduce PCB loadings from target sources. Such reductions would be achieved through contaminated site remediation, Best Management Practices, and Pollutant Minimization Plans.

PCBs are a legacy problem in the sense that they have not been produced in this country since 1977. However, they are still in the environment. PCBs are mostly associated with cooling oil applications and electrical equipment (transformers and capacitors). They are also associated with plasticizers found in a variety of plastics such as bread wrappers, plastic liners, printing inks and waxes. Data show there are areas of high concentrations or "hot spots" created by spills, improper handling and intentional dumping. Further evidence indicates PCBs are still entering the water environment by transport from known and unknown hotspots in the watershed.

Elevated levels of PCBs in fish tissue resulted in issuance of fish consumption advisories for the tidal Potomac River and its tidal tributaries. In Virginia, the Virginia Department of Health has issued fish consumption advisories for 19 impaired waters. A total of twelve different fish species are included in one or more of these advisories.

The schedule in the District of Columbia's Consent Decree (CD) called for a TMDL to be completed in 2007 for the fish consumption impairment in their portion of the Potomac River. In 2004, EPA proposed funding and developing a multi-jurisdictional Potomac River PCB TMDL in accordance with the District's schedule of September 30, 2007. The contractor that developed the modeling for the Hudson River and Delaware Bay TMDLs was hired by EPA. Due to the multi-jurisdictional nature of this project, the Interstate Commission of the Potomac River Basin (ICPRB) agreed to coordinate the effort and assist EPA in developing the TMDL.

Maryland and Virginia are not required to meet the Districts's CD schedule; for example, TMDLs for Virginia's impairments are scheduled for submission to EPA by 2012. However, both states agreed to participate in the effort for the following reasons:

1. The District had to develop a technically defensible TMDL. Due to the integrated nature of the Potomac River with pollutants flowing back and forth across the contiguous jurisdictional boundaries, and the land based PCB sources that exist within each jurisdiction, it would be very difficult and expensive to develop independent TMDLs for only the portion of the river within the jurisdictional boundaries of DC, Maryland, or Virginia. The impaired waterbodies in the three jurisdictions are in such close proximity to each other that the waters, fish, and pollutants cross state lines in each direction;
2. A joint TMDL would be more cost effective and EPA agreed to pay the bulk of the costs for TMDL development; and,
3. A joint TMDL would avoid confusing the public with three independent TMDLs completed on the same regional waterbody.

TMDL Summary

During the development of the Potomac River TMDL, potential sources of PCBs were grouped into seven categories. The table below shows the annual load of total PCBs in the study's Baseline Scenario (Year 2005) for each PCB source category and the equivalent loads when the tidal Potomac and Anacostia TMDL is achieved, followed by the percent reduction needed to attain a safe PCB water concentration to be protective of fish for human consumption.

Total PCB loads (g/year) to the tidal Potomac and Anacostia rivers

Source category	Baseline (g/year)	TMDL (g/year)	Reduction
Potomac @ Chain Bridge	16,433	329	98%
Lower Basin Tributaries	2,857	407	86%
Direct drainage	10,996	413	96%
WWTP	762	68	91%
CSO	3,020	61	98%
Atmospheric deposition	3,070	217	93%
Contaminated sites	15	10	28%
TOTAL	37,156	1,505	96%

While the PCB loads were appropriately developed, there is some level of uncertainty within each category based upon the amount of information available. Therefore, a significant component of implementing this TMDL will be for additional data collection. A good example is the atmospheric deposition source category. The TMDL only accounts for PCB deposition to the water surface. Atmospheric deposition to land may be contributing PCBs to the other source categories but is captured indirectly through those source categories such as direct drainage and CSOs. However, it will take additional data collection to determine just how much of the PCB load comes directly from the atmosphere as compared to runoff from contaminated land. Localized, land based PCBs evaporating from contaminated sites are believed to be a source to the atmosphere. For reasons described above, the targeted reduction levels are subject to change with the collection of additional PCB data.

In order to attain water quality goals, the Commonwealth intends to use existing programs. These include regulatory programs such as VPDES and Toxics Substances Control Act (TSCA) as well as state programs recognized by the *PCB Strategy of the Commonwealth of Virginia*, published in October 2004. EPA's low level PCB laboratory analytical method was used to characterize potential sources including effluent from wastewater treatment plants. Of the eleven Virginia facilities monitored, only five appear to discharge PCBs at levels that may require actual reductions. The levels of reduction identified for these five plants range from 25% to 94% although this is based on a small data set from each facility.

In accordance with the Federal permit regulation, non-numeric water quality based effluent limits are allowed in the VPDES permits under certain conditions (i.e., where numeric limitations are infeasible). This entails the use of Pollutant Minimization Plans and BMPs. Based upon comments received from the Virginia Association of Municipal Wastewater Agencies (VAMWA), DEQ staff developed changes to the implementation section in the TMDL to clarify how Virginia intended to proceed with follow-up implementation (see Issues and Concerns section below). For example, the implementation section now states that non-numeric limits will be used to comply with the waste load allocations in the TMDL. It is also recognizes that further monitoring of these facilities is needed to help guide future implementation actions.

Public Participation

This TMDL report was subject to the TMDL public participation process contained in DEQ's Public Participation Procedures for Water Quality Management Planning that the Board approved in March 2004. The TMDL public participation process provides the affected stakeholders numerous opportunities to participate and provide input to the development of the TMDL allocations and report.

Public participation began August 10, 2005 when DEQ staff met with Virginia point source stakeholders and VAMWA representatives to discuss the Potomac PCB TMDL process. These same parties were invited to join the Technical Advisory (TAC) that subsequently met four times over the next two years. Two rounds of public meetings were held in June of 2006 and July of 2007. Additional meetings, conference calls, and email collaboration also took place between DEQ and VAMWA representatives.

Summary of Issues and Concerns:

During two 30-day public comment periods, with the most recent ending on August 23, 2007, EPA, the ICPRB, DC, MD and VA-DEQ received comments from seventeen agencies or organizations from the three jurisdictions, including detailed comments from VAMWA. A number of issues and concerns were expressed by the regulated community and were similar to those raised in the PCB TMDL for the Delaware River Basin. Six themes pertinent to the stakeholders' comments were identified and a Response to Comments document was prepared by the Potomac River Steering Committee that addresses these themes as well as numerous other specific, more minor comments. A summary of the six themes with the Steering Committee response are as follows:

A. <u>All of the PCBs found in the estuary can be accounted for by atmospheric deposition to the land surface</u>.

A comparison of atmospheric deposition rates to land surface and subsequent watershed runoff is inappropriate. Simply multiplying atmospheric deposition rates by watershed area to estimate an atmospheric deposition load to tidal waters does not account for the complex storage and transport/decay of PCBs throughout the watershed. In fact, strong evidence associates high levels of atmospheric PCBs deposition to highly urbanized areas. In essence, local sources (hot spots such as contaminated sites, etc.) release PCBs to the atmosphere via volatilization. Results from two studies suggest that the best way to reduce atmospheric deposition of PCBs is to find the local, land based sources and remove the PCBs.

B. <u>Method 1668A is not an approved method for analysis of samples</u>.

EPA Method 1668A was released as a final method in December, 1999. It is suggested for use in data gathering and monitoring associated with the Clean Water Act, the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, and the Safe Drinking Water Act (EPA-821-R-00-002). This includes its use for generation of data used to determine TMDLs and for characterization of ambient concentrations and loadings under EPA's Clean Water Act programs (May 31, 2000 letter from William Telliard, Director, Analytical Methods Staff, EPA Office of Water).

EPA is currently considering whether this method should be promulgated for use for the NPDES permit program. Since Method 1668A has not yet been promulgated, its use by regulatory

agencies in the NPDES permit program must be examined on a case by case basis. However, EPA has indicated that use of Method 1668A for Clean Water Act purposes other than NPDES compliance is entirely appropriate, as noted above.

C. TMDLs must be based on adopted water quality standards, not on some other water target.

In the process of developing this TMDL it was determined that the existing, numeric water quality criteria were not protective of the fish consumption designated use in the tidal Potomac River. As a result, the TMDL was developed to address the use impairment due to PCBs in fish tissue as well as to achieve the applicable numeric water quality criteria.

D. The TMDL does not address actual sources of PCBs.

The purpose of this TMDL is to determine by how much the PCB loads delivered to the tidal Potomac must be reduced in order to remove the cause of the impairment listings. Therefore, the focus is on PCB loads as delivered to tidal waters, including each tributary stream, direct drainage (nonpoint source) within defined small watershed areas, atmospheric deposition to the water surface, each combined sewer overflow and wastewater treatment plant discharge into tidal waters or located in direct drain areas, and each known contaminated site in direct drain areas. Subsequent implementation actions will need to focus on the largest sources of PCBs, such as the Potomac watershed above the fall line and direct drainage non-point sources.

E. PCBs in wastewater treatment plant effluent are a pass through from source water supplies.

This comment is not a TMDL development issue, but rather raises an implementation issue regarding NPDES permitting. Whether or not POTWs are sources themselves of PCBs, each POTW is, in fact, a point source loading. Through the TMDL development process for the Potomac River, it has been established that POTWs are sources of PCBs to the impaired water body. As a result, they are required to receive a Waste Load Allocation as part of the

TMDL. Additional data will likely be required before any conclusions can be reached about the contribution of intake water to effluent PCB concentrations. Virginia regulations provide for consideration of "credits" under the Pollutants in Intake Water rule at 9 VAC 25-31-230.G. once a TMDL has been developed and when effluent limitations are developed.

F. The three jurisdictions have different standards and targets.

In accordance with the Clean Water Act Section 303(d)(1)(C), the tidal Potomac PCB TMDL established levels that will achieve the water quality standards in the waters of all three jurisdictions.

REISSUANCE OF VPDES PERMIT NO. VA0052451, DOMINION – NORTH ANNA POWER STATION: On July 5, 2005, Virginia Electric and Power Company submitted a VPDES Permit application for the reissuance of Permit VA0052451, for its discharges to Lake Anna from the North Anna Nuclear Power Station. The existing power plant is a two-unit nuclear power generation station with an average cooling water discharge of 2,100 MGD. The permit authorizes discharges of cooling water, process water, storm water, and sewage effluent from the facility's 0.03 MGD wastewater treatment plant. Dominion's application for this permit reissuance only includes the two existing units and does not address the proposed construction of a third reactor at the North Anna Power Station. The draft permit only addresses the discharge from the two existing units.

Public Notice and Public Hearing

Notice of the proposed permit reissuance and public hearing was published in *The Free Lance-Star* and *The Central Virginian* on June 14, 2007, and June 21, 2007. A correction to the close of the comment period was published in both papers on June 21, 2007. The public notice comment period ended on August 2, 2007.

The public hearing was held at 7:00 p.m. on July 18, 2007, at The Forum of the Louisa County Middle School. Mr. John Thompson served as hearing officer. A question and answer session preceded the hearing.

Twenty-six people provided comments at the public hearing and a total of 80 citizens and/or organizations provided comments. The following organizations provided comments:

- Beyond Nuclear (Nuclear Policy Research Institute)
- Blue Ridge Environmental Defense League
- Dominion Virginia Power
- Friends of Lake Anna
- Lake Anna Civic Association
- Natural Resources Defense Council
- Southern Environmental Law
- Virginia Chapter of the Sierra Club

North Anna Power Station and Permit History

In April 1968, Virginia Electric and Power Company (VEPCO) submitted an application for project certification to the State Water Control Board (SWCB). This application included plans and specifications for the reservoir and waste heat treatment facility. In June 1968, the SWCB issued Certificate 1912 approving the proposed facility and its discharge in accordance with VEPCO's application describing the impoundment of the North Anna River to serve the power plant.

Also in 1968, VEPCO applied to the State Corporation Commission (SCC) for approval to build and operate the North Anna Power Station. In June 1969, the SCC granted License 18669 to VEPCO for the power station and in so doing authorized the company to purchase the land where the waters would be impounded and to construct the dam. In authorizing the creation of Lake Anna, it was recognized that the lake would also provide recreational opportunities and spur growth in the surrounding localities.

The actions of both state regulatory bodies recognized and authorized the impounded waters to be physically separated in two by the construction of a series of three dikes; each side would have a specific purpose. The first section, a 9,600 acre lake (Lake Anna), was created to provide a source of cooling water for the North Anna Power Station. The second section consisting of 3,400 acres was designed and constructed for the dissipation of heat before the cooling water reenters the main body of Lake Anna. This second section is commonly referred to as the Waste Heat Treatment Facility (WHTF) and/or cooling lagoons.

Construction of the North Anna Dam took place in 1971 and Lake Anna and the WHTF were filled by December 1972.

The first NPDES permit for the facility was issued by the SWCB in 1977. Unit 1 began operation in 1978 and Unit 2 began operation in 1980 following separate operating licenses from the Nuclear Regulatory Commission (NRC).

In 1983, VEPCO requested and received permission from the SWCB to conduct a comprehensive section 316(a) study authorized under Section 316 of the Clean Water Act (CWA). The study was to demonstrate that the effluent limitation required to meet the temperature standard was more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of fish and shellfish in and on Lake Anna and the North Anna River downstream of the North Anna Dam. Both Section 316(a) of the CWA and 9 VAC 25-260-90.C allow a variance from temperature criteria where applicants can make a demonstration that aquatic life is protected through the implementation of alternative limitations. The study began in 1984 and was submitted to the State in 1986. The SWCB granted the original 316(a) variance in 1986. The variance was reviewed with each previous reissuance of the permit for the North Anna Power Station and continues with this proposed reissuance. The variance essentially states that the heat rejection limit in the permit, which restricts the amount of heat the power station may discharge, is sufficient to protect Lake Anna.

Summary of Comments and Staff Response

Staff received many comments on the draft permit and we combined some of them where it is possible without losing specifics. The responses were prepared with regulatory, technical, and historical perspectives. (See page 11)

There were two primary comments that challenge the adequacy of the permit, and they are summarized below. Comments were also received in support of the draft permit but we have not detailed them since there is little reason for staff response.

Regulatory status of the WHTF/Cooling Lagoons

The draft permit considers the WHTF to be a treatment facility; and therefore, the permit does not address water quality within it. The predominant comment received is that the WHTF should be treated like every other water body in Virginia, and the permit should protect it as well as Lake Anna.

The draft permit was prepared like its predecessors with the intention of protecting Lake Anna but not the waters within the WHTF. The draft permit continues to abide by the decisions the state made when authorizing the creation of the lake and WHTF in 1968 and 1969.

Many of the organizations and people who commented on this issue want the permit to contain restrictions so that the water temperatures within the WHTF do not rise above a specified temperature. The waters in the WHTF closest to the power station do reach temperatures over 100^{o}F during the summer months.

DEQ acknowledges that the WHTF is unique and was authorized by state regulatory agencies before the Clean Water Act and subsequent regulations. When the SWCB and SCC approved construction of the dam and the creation of the WHTF they clearly understood the role of the WHTF as a cooling lagoon.

The WHTF, created for and used to cool the heated water from the power station, is commonly referred to as the hot side of Lake Anna, but from a regulatory role it is classified as a waste treatment facility and not a surface water. "Surface waters" is the legal term used in the VPDES regulation at 9 VAC 25-31-10 that describes waters subject to permitting; the definition specifically excludes water bodies that are used as waste treatment systems.

Last year DEQ sought and received the opinion of the Attorney General. By letter dated November 30, 2006, the Virginia Attorney General opined that the WHTF is a treatment facility, and the SWCB does not have the legal authorization to impose thermal effluent limitations on the discharge.

For these reasons the draft permit does not attempt to control the maximum temperatures in the WHTF. Instead the permit restricts the amount of heat the power station can discharge for the purpose of protecting Lake Anna.

Staff's response to many of the comments we received are directly affected by the above.

Objection to 316(a) Variance

Staff received many comments that the 316(a) variance should not be granted with this permit reissuance. Comments stated the temperature criteria in the water quality standards are not met, and the maximum temperature in Lake Anna will exceed 32^{o}C thereby causing impairment to the lake. Comments stated that the permit should contain maximum temperature limits.

Section 316(a) of the Clean Water Act allows electrical power generating stations to use specific information and data to seek effluent limit variances from the generic temperature criteria. The variance provides the discharger of cooling water the ability to conduct studies to demonstrate that alternative effluent limits will protect the aquatic life of the receiving stream and that the typical criteria need not be used in preparing the

permit. The Clean Water Act variance language is reflected in Virginia's Water Quality Standards at 9 VAC25-260-90.C.

Dominion conducted such studies in the 1980's and the SWCB granted the first variance for the permit in 1986. The variance has been granted with each subsequent permit reissuance. Since 1986 Dominion has continued to conduct annual temperature and aquatic life surveys in both Lake Anna and the North Anna River. These studies, reviewed by DEQ and DGIF, show a healthy fishery in both waters. For these reasons Dominion has requested a renewal of the variance with this permit reissuance.

The variance in essence says that the heat rejection limit in the permit is a sufficient control to protect the aquatic life in Lake Anna. The maximum temperature and the rise above natural temperature criteria do not need to be used in setting effluent limits for their intended purposes are met by the heat rejection limit.

The heat rejection limit restricts the amount of heat in the discharge. The temperature of the discharge is primarily a function of meteorological conditions; i.e. season of the year. That is, if the intake water temperature is 60^{o}F, the cooling water discharge is 74^{o}F; and if the intake is 80^{o}F, the discharge temperature is 94^{o}F.

The cooling lagoons (WHTF) are designed and used for their intended purpose, to dissipate the heat prior to the water reentering Lake Anna. The VPDES regulations specifically exclude the WHTF from the definition of a surface water and there is no legal basis for regulating discharges of heat from the power plant to the WHTF. Staff does not have the basis to set a maximum temperature in the cooling lagoons since the facility is being used within its defined purpose as a treatment facility.

The water temperature in Lake Anna in the summer months can and does exceed the water quality criteria of 32^{o}C; and in the vicinity of Outfall 001, this temperature will be in part due to the power station cooling water. The purpose of a 316(a) variance is to allow the discharger to demonstrate that there is no impact to the aquatic life if the temperature does go above 32^{o}C and that the permit conditions (e.g. heat rejection limits) are sufficient to protect aquatic life.

The term 316(a) specifically refers to the section of the Clean Water Act that allows for a variance. 9 VAC 25-260-90.C allows the SWCB to grant a 316(a) variance upon finding that the aquatic community of the receiving body is healthy and protected. With each permit reissuance, staff reviews the annual temperature monitoring and fish surveys conducted by Dominion to determine if the variance is still applicable to the current operating conditions and that a healthy, viable fishery is maintained.

EPA Review

The comment summary was submitted to EPA for review in accordance with the 1975 Memorandum of Understanding (MOU) between the EPA and SWCB. Per EPA's letter dated September 20, 2007, EPA does not object to DEQ's issuance of the North Anna Power Station VPDES permit.

Comment Summary
VA0052451 – Dominion North Anna Power Station

1. Support for the Reissuance of the Permit
Comments were received supporting the re-issuance of the permit, re-authorization of the 316(a) variance, dam flow releases, lake level management conditions, and use of the Waste Heat Treatment Facility as cooling lagoons.
Staff Response:
There were no issues for staff to address in these comment letters.

2. Comments on the Proposed Unit 3 and the Early Site Permit (ESP)

Comments were received expressing concerns about:
- the ESP process;
- unresolved issues with the Federal Consistency Certification for an ESP;
- how is pre-site construction, a condition of ESP, addressed in this permit;
- displeasure with the Summary Draft Environmental Impact Statement for an ESP; and
- whether the permit will be reopened and modified if an ESP is received by the permittee.

Staff Response:

The ESP process pertains to the proposed construction of a third reactor at the power station and is outside the realm of the VPDES Permit Regulation and is not a part of the reissuance of the permit. Dominion's application for this permit reissuance only includes the two existing units; therefore, the draft VPDES permit only authorizes the discharge from the two existing units.

Dominion's receipt of an ESP from the Nuclear Regulatory Commission in and of itself will not necessitate a permit modification. Should Dominion wish to proceed with an additional reactor that will use and/or discharge water to or from Lake Anna, the permit will need to be modified. No new withdrawal or discharge can occur without the permit being modified, so Dominion will have to make application for the permit modification.

Storm water, associated with construction activities, is regulated by the Department of Conservation and Recreation's Stormwater Management Program and is no longer under the purview of DEQ. If Dominion proceeds with construction, it will be required to comply with DCR's stormwater management regulations.

3. Applicability of Existing Permit and 316(a) Variance to New Reactor

The following comments were received concerning the addition of Unit 3:
- the existing permit and 316(a) variance are not applicable for a new reactor and a new permit is required with new limits appropriate for the facility;
- water temperatures will increase and flows to the North Anna River will decrease if Unit 3 is constructed; and
- the process and repercussions of adding an additional reactor to the North Anna Power Station.

Staff Response:

Dominion's application for the VPDES permit reissuance only includes the two existing units and does not address any future expansion of the power station. The 316(a) variance also only addresses the existing operations at the power plant. Any new discharge would require the VPDES permit to be modified prior to commencement of the new discharge, and a new 316(a) study conducted to determine if the additional discharge would have an impact on the temperatures of the receiving stream and the health of the fishery.

4. Regulatory Status of the Waste Heat Treatment Facility (WHTF)

Comments were received expressing concerns over the designation of the WHTF as a treatment facility that is excluded from regulation under the VPDES regulations, and that the permit does not protect the waters within the WHTF. The comments included:
- that the designated use cannot include waste transport;
- that 10 streams flow into the WHTF which are considered waters of the U.S.;
- that a land use plan prepared for the Virginia Commission of Outdoor Recreation in 1971 speaks of the entire 13,000 acres of cooling lagoons and reservoir as one unit;
- that Regulation 9 VAC 25-31-10 does not specifically mention waste heat treatment ponds or lagoons or cooling ponds or lagoons as being within the class of excluded waste treatment systems; and
- that staff's comparison of cooling lagoons to a sewage treatment pond is wrong.

Staff Response:

Dominion's license application to the State Corporation Commission (SCC) in 1968 for approval of the dam construction specifically acknowledges the distinction between the "reservoir" and the "treatment lagoons." The SWCB approved Dominion's application in 1968, and the SCC authorized the dam necessary to create Lake Anna and the treatment lagoons in 1969. The SCC, in authorizing the impoundment of the North Anna River, specifically acknowledged the creation and distinction between the 9,600 acre lake and the 3,400 acre cooling lagoons (Waste Heat Treatment Facility -WHTF). The dam was constructed by 1972. Both regulatory bodies recognized the difference between the lake and the WHTF.

The WHTF, used to cool the heated water from the power plant, is commonly referred to as the hot side of Lake Anna but from a regulatory role, it is classified as a waste treatment facility and not a surface water under the

VPDES regulations. “Surface waters” is the legal term used in Virginia’s VPDES regulation at 9 VAC 25-31-10 that describes the waters regulated by the SWCB. Under the VPDES regulation, the definition of surface waters excludes water bodies that are used as waste treatment systems. Sewage lagoons are also waste treatment systems. The Virginia Attorney General by letter dated November 30, 2006, opined that the SWCB does not have the legal authorization to impose thermal effluent limitations on the discharge by Dominion by its reactors at its North Anna Power Station into a series of connected cooling lagoons.
DEQ acknowledges that the WHTF is unique and a vestige of decisions made before the Clean Water Act and subsequent regulations. When the SWCB and SCC approved the construction of the dam and the creation of the WHTF, they clearly understood the role of the WHTF as a cooling lagoon and that several streams would flow into it. The draft permit continues to abide by the current VPDES regulations and the decisions the state made when authorizing the creation of the lake and WHTF.
Whether or not the 10 streams that flow into the WHTF are “Waters of the United States” is not pertinent to the VPDES regulations. “Waters of the United States” is the legal term used in the federal Clean Water Act (CWA) that describes the waters regulated by the federal government under §§ 402 (NPDES program) and 404 (dredge and fill program) of the CWA. “Surface waters” is the legal term used in Virginia’s VPDES and VWP regulations that describes the waters regulated by the SWCB. Accordingly, the SWCB does not regulate “Waters of the United States” under the VPDES program, it regulates “surface waters.”

5. State Does Not Have Authority to Deem Waters as Private
One comment was received stating on June 12, 1969, the SCC issued a license to construct a dam across the North Anna River. This is a problem with having navigable streams in cooling lagoons impounded by the state. These were waters of the U.S. and cannot be deemed private waters of the state.
Staff Response:
The creation of the lake and the WHTF through the construction of the dam occurred before the existing Clean Water Act and subsequent federal and state regulations. It is clear that the state, through the SWCB and the SCC intended for the WHTF to serve as cooling lagoons. Under the VPDES regulation, the definition of surface waters excludes water bodies that are used as waste treatment systems. The SWCB and DEQ have interpreted, and the Attorney General has opined that the WHTF is a waste treatment system. Whether or not the WHTF is interpreted as a waste treatment system has no bearing on the ownership of the WHTF. Ownership disputes are beyond the purvie w of DEQ; they are issues solely between Dominion and the surrounding land owners.

6. Inclusion of Deeds in the Fact Sheet
Comments were received concerning deeds in the Fact Sheet:
- DEQ mislead the public and federal agencies into thinking land in the cooling lagoons were deeded as private water treatment facilities and not public bodies of water;
- DEQ used data within the deeds to make the decision that the cooling lagoons are private; and
- the Attorney General’s letter specifies waste treatment system but deeds and presumably other public documents specify water treatment systems.

Staff Response:
The deeds in the Fact Sheet are included as examples of Dominion’s ownership of the land surrounding Lake Anna, the WHTF and Dominion’s control of access to Lake Anna and the WHTF. Staff recognizes that these are only examples and there are other forms of control. Staff does not think the examples are misleading but are accurate examples of Dominion’s control over access to the WHTF.
The wording used in deeds or other documents is outside the purview of DEQ but staff believes the meaning and intent is clear, and that waste treatment system and water treatment system can be considered synonymous.

7. Recommendation to Cite General Assembly Laws or SCC Documents With Regard to Right to Create 3400 Acre Lagoon
One comment was received stating the applicant should cite in Section 26 of the Fact Sheet general assembly laws or SCC documents and specific language that gave VEPCO (Dominion) the right to create 3400 acre body of water and that putting the statement in a deed did not in and of itself give VEPCO such authority.
Staff Response:
The SCC decision is discussed in Section 15.b. and 19.c. of the Fact Sheet.

8. Negligence of Government Agencies
One comment was received stating government agencies have been negligent by ignoring the lagoons and tracking negative environmental impact that has been developing over the last several years.
Staff Response:
The water quality within the WHTF must be monitored and managed by Dominion as a permittee must do for any treatment facility. Dominion is responsible for the quality of water that leaves the treatment facility. Accordingly, the draft permit contains a requirement for Dominion to conduct toxicity tests on the water leaving the facility.

9. Public Access to Cooling Lagoons
Comments were received indicating that there are a minimum of 13 public access points to the "private" cooling lagoons.
Staff Response:
Staff consulted with Dominion about access to the cooling lagoons. Dominion stated, "The Company has conveyed several small parcels of land within the shore land and bottom of the WHTF to the Virginia Department of Transportation (VDOT). These conveyances were for the limited purpose of providing rights-ofway
to construct highway bridges across the waters of the WHTF. The conveyances encompassed only enough land to accommodate the bridge crossings and did not grant a right of access to anyone other than VDOT for the purpose of constructing and maintaining the bridges."
Staff also consulted DGIF and they are unaware of any public access to the WHTF.

10. View of Cooling Lagoons from Other Entities
One comment was received indicating the Louisa County Sheriff and DGIF treat the cooling lagoons as public waters and routinely patrol and issue boating violation tickets as well as insuring public water markers in the lagoons conform to state public standards.
Staff Response:
DEQ is not able to control how other entities view the cooling lagoons or how they interpret their regulations. DEQ has consulted DGIF and their regulations require all persons in Virginia to have a license when fishing in Virginia; their fishing and safety regulations do not distinguish between public and private waters and do not contain an exclusion for waste treatment facilities.

11. VWP Program vs. VPDES Program
Comments were received stating:
- the difference in designation of cooling lagoons between the VWP Program and the VPDES program; and
- DEQ must correct the VPDES regulation that exempts cooling lagoons from the definition of surface waters as it is in conflict with NPDES regulations, 40 CFR Part 122.2.
Staff Response:
"Waters of the United States" is the legal term used in the federal Clean Water Act (CWA) that describes the waters regulated by the federal government under §§ 402 (NPDES program) and 404 (dredge and fill program) of the CWA. "Surface waters" is the legal term used in Virginia's VPDES and VWP regulations that describes the waters regulated by the SWCB under those regulations. Accordingly, the SWCB does not regulate "Waters of the United States;" it regulates "surface waters."
The VPDES and VWP regulations define surface waters differently. Under the VPDES regulation, the definit ion of surface waters excludes water bodies that are used as waste treatment systems. The SWCB and DEQ have interpreted, and the Attorney General has opined that the WHTF is a waste treatment system and not a surface water. Under the VWP regulation, the definition of surface waters does not exclude water bodies that are used as waste treatment systems; such water bodies are regulated under VWP. Because of different regulatory language, the SWCB can require a dredge and fill or water withdrawal permit in the WHTF under the VWP program but cannot impose permit conditions on the discharge of thermal effluent into the WHTF under the VPDES program.

12. 316(a) Variance and the Clean Water Act

Comments were received objecting to the 316(a) variance. The comments stated that:
- DEQ cannot justify granting the variance and subsequent lack of enforcement as water pollution statues were in effect before the startup of Unit 1;
- DEQ must demonstrate that 9 VAC 25-260-60, 9 VAC 25-260-70, and 9 VAC 25-260-80 are not violated;
- the permit lacks temperature limits for Lake Anna and the cooling lagoons;
- the 316(a) variance should be denied;
- maximum temperature of 93°F should be imposed at Outfall 001, not an unlimited temperature variance;
- a panel of representatives including DEQ, DGIF, Dominion, and the public review 316(a) variance for possible revisions or changes in the temperature variance;
- the waiver of Clean Water Act provisions appear to exceed DEQ authority;
- the variance ignores several major requirements of the Cle an Water Act;
- many violations of the current Clean Water Act limit of 89.6$_{o}$F (32$_{o}$C) for non-tidal waters throughout the entire lake;
- the Clean Water Act defines effluent discharges to Lake Anna shall not be increased more than 6.3°F above natural water temperature; yet the main lake temperature has been recorded at 92°F.

Staff Response:

As stated above, under the VPDES regulation, the definition of surface waters excludes water bodies that are used as waste treatment systems. The Virginia Attorney General by letter dated November 30, 2006, opined that the SWCB does not have the legal authorization to impose thermal effluent limitations on the discharge by Dominion by its reactors at its North Anna Power Station into a series of connected cooling lagoons. The cooling lagoons are designed for waste heat treatment and are used for their intended purposes for heat dissipation. Accordingly, staff does not have the basis to set a maximum temperature in the cooling lagoons since the facility is being used within its defined purpose. The permit does contain a limit on the amount of heat Dominion can discharge from the WHTF into the reservoir. The temperature of the lake is primarily a function of meteorological conditions.

The term 316(a) specifically refers to the section in the Clean Water Act that allows for a variance to temperature-based water quality standards. 9 VAC 25-260-90C allows the Board to grant a 316(a) variance upon finding that the aquatic community of the receiving water body is healthy. Wit h each permit reissuance, staff reviews the annual temperature monitoring and fish surveys to determine if the variance is still applicable to the current operating conditions and that a viable, healthy fishery is maintained.

Both DGIF and DEQ staff review the Dominion's Annual Reports for the 316(a) variance for the reservoir. Past reviews, including the most recent review, have not identified any problems, so revisions to the variance are not necessary and staff has no reason not to recommend granting of the 316(a) variance with this reissuance.

13. EPA Acceptance of 316(a) Variance

Comments were received that EPA has rationalized its continual granting of a variance for the WHTF by citing the creation of the lake was prior to the enactment of the Clean Water Act.

Staff Response:

DEQ can not speak for EPA. As for DEQ, the granting of the variance is dependent on the demonstration that the heat discharged from the WHTF to the reservoir does not impede the fishery of Lake Anna. A variance could be issued regardless of whether the lake was created before or after the Clean Water Act.

14. Omission of Thermal Plumes and Charts 1 and 2

One comment was received noting that the draft permit does not contain two charts nor the thermal plume surveys the previous permit contained.

Staff Response:

Charts 1 and 2 are now incorporated into the Dominion Annual Report, so they are no longer necessary as attachments to the permit. In the draft VPDES permit, Part I.E.13 Post 316(a) Monitoring special condition includes the temperature monitoring specified in Chart 1.

The thermal plume surveys were conducted as part of the original 316(a) study and have continued since. Staff believes the requirement is no longer necessary. The circulation and plume in the lake has been documented and no further monitoring is required. It is not necessary to determine compliance with any aspect of the permit.

15. Lake Anna's Water Temperature

Comments were received concerning the water temperature of Lake Anna and the heat rejection limit in the permit. The comments stated:

- the heat rejection calculation in the draft permit is a function of flow rate and that without flow limits there is no limit on heat discharge to the lake;
- Dominion can heat the entire lake to any temperature without penalty;
- without temperature restrictions the draft permit has no protections from the Clean Water Act for either humans or fish;
- the frequency of calculated data should be recorded 1/H rather than 1/D as indicated in the draft permit;
- average and maximum heat rejection should be reported on the DMR;
- daily averages, maximum and minimum from hourly measurements of temperatures in the condenser and out of the condenser along with flow rates calculated by the number of pumps running should be reported on the DMR;
- citizen monitoring data indicates a violation of the heat rejection limit by the permittee in 2005 and 2006 and that this data was provided to DEQ and we ignored it;
- removal of Best Professional Judgment under "parameter heat rejection" footnote as this is a calculated value;
- the current heat rejection limit is not user friendly and not easily monitored by the public;
- the impairment of the lake's ecology and that of the North Anna and Pamunkey rivers has been known for years and is due in large part to the two nuclear units and the continued release of hot water and will continue to create ecological havoc, and negatively effect the entire York River watershed;
- U.S. Code Title 33, Chapter 26, Subchapter III, Section 1326 of Clean Water Act says that more stringent thermal limitations may be imposed to assure the protection and propagation of shellfish, fish and wildlife in the body of water; and
- DEQ's argument that meteorological conditions are not considered in the permit is not true.

Staff Response:

The current permit and draft permit indicate the amount of heat that Dominion can discharge into the WHTF to ensure that the heat being discharged from the WHTF into the reservoir falls within the conditions set by the 316(a) variance. It is the same restriction that has been in place since the facility began discharging.

The term heat rejection refers to the heat not converted to electricity and wasted. It is a design parameter of the power station and is calculated based on the efficiency of generation of electricity; the conversion of the heat used to generate steam to electricity. This is how heat rejection was initially determined and how it has been calculated and reported by Dominion since the facility was first permitted.

Dominion has not and is not currently required to calculate or record heat rejection as outlined in the draft permit. The draft permit contains monitoring and reporting calculations that make the heat rejection calculation more transparent than the current permit. Since it is a design parameter, and inherent to the 316(a) variance, staff has designated the heat rejection as both best professional judgment and water quality based in the Fact Sheet.

An exceedance of the heat rejection limit would constitute a permit violation as it would conflict with the conditions upon which the 316(a) variance is based. DEQ staff reviewed the Discharge Monitoring Reports from 2002 - 2006 and determined that there have not been any permit violations.

After nearly 30 years of operation, it is clear that the amount of heat discharged is not the primary influence on temperature in the lake or lagoon; the primary source of heat to Lake Anna is from solar radiation. Lake Anna and the WHTF have a combined surface area of about 20 square miles. Per the 316(a) demonstration study conducted by Dominion, the power station contributes an additional one-tenth the amount of natural heat that enters the system on summer days. Whether the additional one-tenth raises the water temperature significantly depends on the rates of heat loss through radiation and evaporation that must balance total input during midsummer.

The 316(a) fishery studies conducted by the facility demonstrate that the amount of heat discharged does not change the temperature of Lake Anna significantly and has not affected the beneficial uses of the lake, particularly the fishery, since the facility began operation.

Staff believes the reporting requirements in the draft permit are sufficient to determine compliance with the permit. Should staff need further information during the term of the permit; staff can request additional

information from Dominion through Part II.D of the permit. Further, staff believes that the frequency is adequate given the variation inherent to pump flow calculations.

16. Temperature Monitoring

Comments were received expressing concerns over the lack of monitoring in Lake Anna, creek entries to Lake Anna, the North Anna River, and the cooling lagoons.

Staff Response:

Temperature monitoring has been conducted by Dominion since 1986 when the 316(a) variance was originally issued. The draft permit requires Dominion to continue to monitor temperature at a minimum of eleven stations; three in the Waste Heat Treatment Facility, seven in Lake Anna and one in the North Anna River. Fixed continuous temperature recorders are used at each location to record hourly temperature in degrees Celsius. Results from the temperature monitoring are summarized and reported to DEQ on an annual basis. The annual report also contains calibration and validation of the temperature recording equipment.

17. Statistical Distribution of Summer Temperatures

Comments were received stating DEQ's statement "except for 2002, the temperatures in Lake An na did not exceed 32^{o}C" is grossly misleading and that the SWCB should request a statistical distribution of summer temperatures around the mean value for the period cited above.

Staff Response:

An additional review of Attachment 11 of the Fact Sheet demonstrates periods when the hourly high temperatures exceeded 32^{o}C in the lake, but none of the hourly mean temperatures exceeded 32°C. Staff will correct the body of the Fact Sheet to reflect this finding. Staff does not see the benefit of a statistical analysis of the temperature data and believes the empirical reporting of the data, as in Attachment 11, is preferable.

18. Investigation into an Increase in Water Temperature

Comments were received indicating an increase in water temperatures at Lake Anna of 5.7^{o}F from 1994 – 2006 and questioning if this increase had been investigated as to the cause and impact.

Staff Response:

As stated above, the amount of heat Dominion can discharge has remained the same since the facility was first permitted and changes in temperature are primarily associated with meteorological conditions. In addition, changes in the watershed, particularly more development, are likely to influence lake temperature.

Staff did look at temperatures of three monitoring stations for the period 2001 to 2006, a period that included a severe drought, and noted that there was no significant difference in temperatures.

19. Ability for DEQ to Place Temperature Limits in the Permit

One comment was received stating a staff memo in 1968 put temperature limits of 99^{o}F on the exit of cooling lagoons and a temperature limit of 93^{o}F for the reservoir outside the immediate area of the outfall in July and this demonstrates that the SWCB can impose temperature limits on discharge permits even when meteorological conditions are considered.

Staff Response:

DEQ has the ability and responsibility to place limits in permits. There are many ways in which a permit can be prepared and limitations can take many forms.

The limits in this permit were derived on the site specific conditions unique to the North Anna Power Plant, the WHTF, and Lake Anna. The 316(a) study, prepared in accordance with federal and state regulations, demonstrated that the heat rejection limit is sufficient to protect Lake Anna and no other temperature restrictions are required.

The values mentioned in the comment were not recommendations for limits, they were theoretical assumptions based on the design parameters of the power station and cooling lagoons. Further, the memo preceded the Clean Water Act which expressly gave the ability to issue limits based on a 316(a) variance.

20. Unhealthy Water Temperatures

Many comments were received stating that temperatures on the lagoon side have been recorded as high as 106°F in the summer of 2006 and questioned at what point is the water temperature deemed unhealthy for human activity and why is this health concern not addressed in the proposed variance to the Clean Water Act.

Staff Response:
Because the only waste being treated in the WHTF is temperature, Dominion has allowed adjacent landowners access to and use of the water. There is no public access to the WHTF. Terms for access and use are defined by Dominion to include that the uses of the WHTF shall not contravene the purpose of the facility as a cooling lagoon.
Staff does not believe Dominion's allowing its neighbors to use the WHTF for recreation warrants any special conditions in the permit. Nonetheless, both Dominion and its neighbors should recognize the risks of swimming in hot temperatures. For its part, Dominion has installed a continuous temperature monitor at the end of the discharge canal to the WHTF. Real time temperature data for the discharge canal can be accessed at *http://www.dom.com/about/stations/nuclear/northanna/whtf.jsp* so users may know in advance what the temperature is before accessing the water.

21. Human Health and Elevated Water Temperature
One comment was received stating Part I.E.13 of the draft permit should include a discussion on human health problems associated with elevated water temperatures.
Staff Response:
VPDES permits address pollutants and concerns where there is reasonable potential for an impairment of a water quality standard. Staff does not have any reason or evidence that any of the discharges to Lake Anna are a threat to human health. Temperatures in the WHTF are at times very elevated and caution should be exercised. But as explained above, the WHTF is not subject to temperature restrictions and use of it for recreation is a matter between Dominion and adjacent landowners.

22. WHTF Temperature Monitoring and Notification to Citizens
Comments were received with the following questions and requests:
- what means are in place to inform the public when the water becomes unsafe for human activity;
- heat rejection data be available to the public in real time on Dominion's web site in place of the not yet commissioned real time temperature at the end of the discharge canal; and
- a recommendation for permit to contain request for real time monitoring at continuous temperature monitor at end of discharge canal.
Staff Response:
Dominion has installed a continuous temperature monitor at the end of the discharge canal to the Waste Heat Treatment Facility. Real time temperature data for the discharge canal can be accessed at *http://www.dom.com/about/stations/nuclear/northanna/whtf.jsp*.
Staff has no basis or need to require a reporting method, real time web reporting, different from all other VPDES permit holders. The reporting frequency and method in the draft permit is sufficient to determine compliance.

23. Substantiate Claim That Primary Source of Heat to Cooling Lagoons and Lake Anna is From Solar Radiation
Comments were received asking for DEQ to substantiate its claim that the primary source of heat to the cooling lagoons and Lake Anna is from solar radiation.
Staff Response:
The average temperature for the two extreme temperature months, February (2001-2006) and August (2001-2006), can be used to demonstrate that seasons have greater influence on water temperature in both the WHTF and lake.
Location Temperature ^{o}C February Temperature ^{o}C August
WHTF (near Outfall 001) 12 33
Lake Anna at State Route 208
(north of North Anna Power Station)
6 30
The North Anna Power Plant discharges (adds) the same amount of heat each day regardless of season. The warming that occurs from February to August, and the cooling that occurs from August to February, are due to seasonal variation and solar radiation. Dominion's discharge has minimal influence on the seasonal variation.

24. Fresh Water Clam Deaths (*Corbicula fluminea* aka Asian Clam)

Comments were received concerning:

- a die off of clams due to excessive temperatures in the cooling lagoons and Lake Anna;
- displeasure with DEQ's response to the reported clam die off in the cooling lagoons and Lake Anna;
- a request for DNA analysis of clams in the cooling lagoons and Lake Anna to ensure that water temperatures protect the habitats in which they survive; and
- a request to extend the public comment period until the fresh water clam investigation is complete.

Staff Response:

DGIF and DEQ investigated the reported clam kill in Lake Anna and the WHTF. Staff visited the lake and WHTF four times. DEQ believes that the increase in the number of shells (*Corbicula*) on the shoreline and in the shallow waters is due to natural mortality during summer drought periods which are characterized by low water levels and higher seasonal temperatures. There is no evidence to support an unnatural event occurring in the lake or WHTF. The results of this investigation are documented in the facility's permit reissuance file and in the Northern Regional Office Pollution Response Program files under complaint number IR 2008-N-0057. In quick summary, the investigation concluded:

- there was insufficient evidence to conclude that any die-off was caused by anything other than natural mortality; and
- that the predominant clam shells belong to *Corbicula fluminea*, an invasive species commonly known as Asian clam.

In response to the complaints on how staff conducted the investigation, it was handled as a PREP case, in a manner that any fish kill would be conducted. DEQ's Pollution Response Program, known as PREP, provides for responses to air, water, and waste pollution incidents in order to protect human health and the environment. PREP staff often work to assist local emergency responders, other state agencies and federal agencies, as may be needed to manage pollution incidents. Oil spills, fish kills, and hazardous materials are examples of incidents that may involve PREP. It is staff's practice that when the complaint involves a permitted facility that DEQ contacts them to begin the investigation.

The specific request of the commenter with regard to the recommendation for deoxyribonucleic acid (DNA) analysis is not clear. While the overall concern is to ensure a suitable habitat for the clams and/or mussels, the purpose of the DNA recommendation is uncertain. It is not necessary to conduct DNA analysis in order to accurately identify species of clams and mussels in Lake Anna, the WHTF or other water bodies. DEQ biologists are trained to identify these organisms to the family level. Specialists can further identify to the species level with proper training and indexing keys. Likewise, DNA testing is not necessary in order to evaluate the habitat for supporting a healthy aquatic community.

25. Decline in Bluegill Sunfish Population

One comment was received stating a distinct reduction in the number of bluegill sunfish observed in the lake and the rise in water temperature is suspected as the cause.

Staff Response:

The bluegill sunfish (*Lepomis macrochirus*) is not a Threatened and Endangered Species nor a Species of Special Concern on the lists maintained by DGIF.

In the 2005 fish survey, the numerically dominant species collected in both the lake and cooling lagoons by boat electro fishing was the bluegill. Bluegill also ranked first in terms of weight in both the lake and the WHTF.

26. Best Available Control Technology (BACT)

One comment stated that the Clean Water Act states thermal discharges are subject to BACT and there are no BACT controls in the draft permit.

Staff Response:

BACT is terminology that is applicable to the Clean Air Act. BPT (Best Practicable Control Technology Currently Available), BAT (Best Available Technology Economically Achievable), and NSPS (New Source Performance Standards) are the terminology that are used in 40 CFR Part 423 Steam Electric Power Generating Point Source Category. When Dominion constructed the facility the cooling lagoons were the best available technology for waste heat dissipation.

27. Authority of DEQ/SWCB to Control Point Sources to Cooling Lagoons

Comments were received stating that the Attorney General's opinion says thermal limits cannot be placed on the discharge to the WHTF yet the draft permit contains heat rejection limits at the very point the Attorney General says the State lacks the legal authority to regulate; either the Attorney General or the permit is wrong.

Staff Response:

The term heat rejection refers to the heat not converted to electricity and wasted. It is a design parameter of the power station and is calculated based on the efficiency of generation of electricity; the conversion of the heat used to generate steam to electricity. The facility's heat rejection has always been calculated at the power plant based on the production at the facility and represents the amount of heat entering the WHTF to ensure that the heat being discharged from the WHTF into the reservoir falls within the conditions set by the 316(a) variance. In past permits, however, Dominion was required to report heat rejection on the Discharge Monitoring Report (DMR) for Outfall 001, which is the discharge point to the lake. Staff believed reporting of heat rejection at Outfall 001 was confusing. Accordingly, staff created Outfall 101 requiring Dominion to report heat rejection on the DMR for Outfall 101 so as to clarify that this is the amount of heat entering the cooling lagoons and not the heat entering the lake. The corresponding DMR requirements for Outfall 001 were removed.

Staff has also added provisions that heat rejection be calculated on the basis of the flow of water entering the condensers and its temperature entering and leaving the condensers at the plant in addition to the existing way of calculating based on production.

The change to the permit concerns how the facility's heat rejection is to be calculated and reported to DEQ. The change better facilitates the recording of the heat rejection data and is consistent with the design of the facility.

28. Proposed Permit Has No Clean Water Act Protections for Either Humans or Fish

Comments were received expressing concerns that the draft permit:

- contains no protections under the Clean Water Act for either humans or fish;
- does not abide by U.S. Code Title 33, Chapter 26, Subchapter III, Section 1312 of Clean Water Act which states effluent limitations should be imposed on effluents that would not interfere with the attainment of water quality in a specific portion of the waters to protect public health, shellfish, fish and wildlife and allow recreational activities on the water;
- does not uphold Article 11 of the Virginia Constitution; and
- is inconsistent with the Clean Water Act.

Staff Response:

VPDES Permits are prepared to protect the Virginia Water Quality Standards at 9 VAC 25-260. The standards define the beneficial uses of the waterbody. Included with the standards are criteria that are used to define the physio-chemical parameters needed to meet the defined beneficial uses, including protection of aquatic life and human health in surface waters.

The permit, as drafted, requires effluent limits that are designed to protect the water quality standards of Lake Anna as well as the potential to impact the North Anna River and all downstream waters. The permit was prepared in accordance with state and federal regulations and applicable practices and guidance. As such, staff believes the permit is protective of the Virginia Water Quality Standards and protects the Commonwealth's waters from pollution.

29. Dominion Should Cut Back on Power to Meet Clean Water Act

Comments were received indicating Dominion should cut back on power production to meet the Clean Water Act.

Staff Response:

The facility is in compliance with their effluent limitations and permit and the power plant is not contributing to any compromise of the beneficial uses of Lake Anna. As such, there is no basis for staff to change the effluent limitations or Dominion's operation of the power plant.

30. U.S. Code Title 33, Chapter 26, Subchapter III, Section 1313 of Clean Water Act

One comment was received quoting the above Code that water quality standards to protect the public health and welfare, plus fisheries and wildlife and recreational and other uses for intrastate waters shall be reviewed at least once each three year period.

Staff Response:
The permit was prepared to protect the water quality standards of Lake Anna. All of Virginia's water quality standards are reviewed every three years pursuant to the SWCB's Triennial Review, and changed as needed.

31. Impairment of Lake Anna Streams
One comment expressed concerns that 5 tributaries to Lake Anna were on Virginia's 1998 Clean Water Act 303(d) list.
Staff Response
The Clean Water Act §303(d) impaired waters list is published biennially in even numbered years. The 1998 §303(d) list included portions of four tributaries to Lake Anna: Mountain Run, Pamunkey Creek, Plentiful Creek and Terrys Run. All of these streams were identified as not supporting the swimming use due to exceedances of the fecal coliform bacteria criteria. The most recent §303(d) list, published in 2006, identified eleven stream segments in the watershed with water quality impairments. All of these streams drain into Lake Anna. A bacteria TMDL addressing seven impaired segments, including all of the 1998 listed impairments, was approved by the U.S. EPA in November 2005.
Additionally, portions of Contrary Creek and Terrys Run are identified as not supporting the aquatic life use. Contrary Creek is noted with a pH impairment from the headwaters downstream until the impounded waters of Lake Anna. Terrys Run is noted with a dissolved oxygen impairment from the confluence with Horsepen Branch downstream until the confluence with Riga Run.

32. PCBs in Lake Anna
Comments were received expressing:
- concerns over the dumping of PCB laden wastewater into Lake Anna; and
- concerns over the State's scheduled development of a PCB TMDL by 2014 conflicting with EPA's 2010 schedule.

Staff Response:
Beginning in 2004, the DEQ partnered with the U.S. Army Corps of Engineers (ACE), the Lake Anna Civic Association, the University of Mary Washington and the U.S. Geological Survey (USGS) to investigate the source(s) of PCBs in the drainage area. The work has been executed by the ACE under §206 of the Water Resources Development Act of 1996. The study has included water column and sediment sampling in streams, Lake Anna and the WHTF using methods capable of very low detection limits. To date, there has not been a clear source(s) of PCBs identified. The work on this project is on-going.
PCB concentrations in the water column have been measured using semi-permeable membrane devices (SPMDs) and grab samples. The median water column concentration of total PCBs from all samples in the watershed is 0.53 nanograms per liter (ng/L). Measured concentrations of total PCBs range from non-detected to 3.4 ng/L. The current Virginia water quality standard for total PCBs is 1.7 ng/L. Note that the highest water column concentration was observed in the Pamunkey Creek arm of the lake well upstream from the location of the power station.
Given the observed concentrations of PCBs in the water column and the power station use of this water as oncethrough
cooling water, it is not accurate to state that PCB laden wastewater is being discharged into Lake Anna by the Dominion facility. The source(s) of the PCB impairment has been challenging to identify and work continues on this effort.
TMDL development is required under §303(d) of the Federal Clean Water Act, the implementing regulations of the U.S. EPA at 40 CFR Part 130, as well as the Virginia Water Quality Monitoring Information and Restoration Act (WQMIRA). The schedule for TMDL development is influenced by the June 1999 Consent Decree (CD) addressing the litigation between the American Canoe Association, Inc. and American Littoral Society with the U.S. EPA. The TMDL development schedule contained in the CD applies to a specific list of impaired waterbodies identified in the CD (i.e. those waterbodies impaired prior to 1999). Only waterbodies subject to this schedule must have TMDLs completed by 2010.
The PCB fish consumption impairments identified in the Lake Anna watershed were first included on the §303(d) list in 2002 and are not subject to the CD schedule.

33. Incorrect Mercury Statement

One comment was received indicating under Section 15.a of the Fact Sheet the statement "the segment VAN - F07L_NAR01A02 also has an observed effect for mercury in fish tissue" is incorrect and should be removed. The response indicates Lake Anna does not have any VDH fish advisories for mercury in fish tissue.
Staff Response:
While a fish consumption advisory issued by the Virginia Department of Health (VDH) would result in an impairment listing for the particular contaminant, a VDH fish consumption advisory is not the only mechanism by which an assessment unit is noted with an impairment. Additionally, an observed effect differs from an impairment of the fish consumption use. These distinctions are explained in the 2006 Water Quality Assessment Guidance Manual (Guidance Memo No. 05-2017). For the 2006 Integrated Assessment, two assessment units in the Lake Anna reservoir were noted with an observed effect for mercury in fish tissue based on exceedances of the mercury tissue screening value (TSV). These two segments are located in the main body of the lower lake (VAN-F07L_NAR01A02) and upstream in Terrys Run (VAN-F07L_TRY01A04). The TSV value for mercury in fish tissue is 300 parts per billion (ppb). This value was exceeded in carp at both locations during sampling conducted in 2003. Mercury fish tissue concentrations of 382 ppb and 386 ppb were measured at DEQ monitoring stations 8-NAR034.92, located in the main body of the lower lake, and 8-TRY001.33 in the Terrys Run arm of the lake, respectively.

34. Clean Water Act Allows Changes in New Permits – 401(a) Certification
One comment was received stating Section 401(a) of the Clean Water Act requires state permitting agencies to submit to EPA a certification that all discharges will comply with ambient water quality standards.
Staff Response:
The permit is the certification that the discharge will not cause nor contribute to a violation of the water quality standards. The VPDES permit as drafted is protective of the current Virginia Water Quality Standards, 9 VAC 25-260 of Lake Anna. A 401 Certificate was issued first by the SWCB to Dominion on August 29, 1973. In this Certificate, the Board required the Applicant to comply with all applicable Water Quality Standards. The Certificates were revoked in 2001 when the flow release requirements were placed in the reissued VPDES permit.

35. Flow Releases and Lake Level Management
Comments were received concerning the Lake Level Contingency Plan (LLCP):
- incremental decreases in flows to North Anna River should begin at 249'msl instead of 248'msl;
- the normal lake level of 250'msl should be raised three inches to 250.25'msl; and
- there is uncertainty about the effects of a drought and the necessary minimum instream flows.
Staff Response:
The conditions in the draft permit are those that were derived through stakeholder meetings in 2000 and are designed to protect the needs of both upstream and downstream users and the aquatic life of the North Anna River. Staff believes the set of conditions in the permit are an adequate compromise amongst the stakeholders and no changes are recommended without a consensus amongst all parties.
The draft permit does not require Dominion to maintain the lake level at 250'msl. If Dominion can and chooses to maintain this additional level they may do so without consequence to the draft permit.
The 40cfs minimum instream flow under non-drought conditions, and the 20cfs minimum instream flow under the LLCP are both above the 7Q10 flow that existed in the river prior to the construction of the dam.

36. Request for Real Time Data from Gaging Station
Comments were received stating:
- installation and operation of the gaging station downstream of the dam are not completely addressed;
- data be provided from the gaging station required by the draft permit in real time;
- that a USGS station number be obtained for this station and it be included in the USGS data base;
- flow and water temperature should be recorded hourly and reported as a daily average with daily maximum and daily minimum to DEQ and USGS; and
- questions as to whether plans and locations were approved by DEQ and if construction is complete.
Staff Response:
DEQ has not approved the plans or location of the gaging station. DEQ is aware that Dominion has elected to proceed with the installation of the gaging station as required by the draft permit. They have done so to assist

with current studies on the North Anna River. Further, it is staff's understanding that Dominion has appropriately proceeded with advice from USGS.
The purpose of the gaging station is for use when the lake level management and contingency plan is in effect to assure proper downstream flows; water temperature is not required for this assessment. The flow data are required by the draft permit to be of sufficient quality for inclusion in the USGS database. The request for a USGS station number and for the flow data to be included in the USGS database is outside the realm of the VPDES Permit Regulation since it is not needed for permit compliance. Dominion is welcome to provide the data to USGS.
Staff believes that the draft permit language is sufficient, and the specific details on the daily operation of the gaging station can be addressed through the Operations & Maintenance Manual (O&M Manual). The O&M Manual will be reviewed and approved by DEQ.

37. Management of Toxic Pollutants
Comments were received stating:
- a toxics management plan is required for the facility;
- acute toxicity testing should be required as well as chronic toxicity testing;
- annual chronic toxicity testing should be conducted in August or September and not just any time;
- toxicity testing should be increased if any measurement fails the criteria; and
- a TRE plan should be required in the event of a failed toxicity test.

Staff Response:
A Toxics Management Program is in place for Outfall 001. The toxics monitoring language in the draft permit is the same as that used throughout all VPDES permits and is consistent with VPDES regulations. VPDES regulations do not require, and VPDES permits no longer contain Toxics Reduction Evaluation (TRE) language as this language is not necessary. A permit condition allows the permit to be reopened to include a Whole Effluent Toxicity limit if the data shows the effluent to be toxic. Compliance with a limit will inherently require a TRE.
Past toxicity testing of Outfall 001 during the months of August and September demonstrated no toxic effects from the effluent. The requirement for the testing to occur in a specific month has been removed from the draft permit and monitoring shall be conducted once during a calendar year for Outfall 001 with two species, *C. dubia* and *P. promelas.*
Separate acute toxicity testing was removed from the draft permit since past acute toxicity testing showed no toxic effects from the effluent. Guidance Memorandum 00-2011 states that acute criteria are applicable to intermittent discharges and chronic criteria are applicable to continuous discharges. Outfall 001 is a continuous discharge, so conducting chronic toxicity testing is more appropriate. The permittee is required to obtain the LC_{50} value from the chronic testing, and acute toxicity can be derived from this value.

38. Tritium Monitoring and Management
Comments were received stating:
- concern for the release of radioactive tritium to the cooling lagoons and Lake Anna;
- oversight should not be deferred to the nuclear industry and the Nuclear Regulatory Commission;
- requests that the VPDES permit include monitoring for tritium; and
- requests that tritium be added to the toxics program.

Staff Response:
Dominion monitors tritium at various locations throughout the facility in accordance with Nuclear Regulatory Commission requirements; they prepare annual reports summarizing the monitoring results. Staff has reviewed these data and believes there is no reasonable potential for any of the permitted discharges to cause an exceedance of the tritium water quality criteria. Further, staff believe the permit, through special condition Part I.E.12 which specifies that radioactive discharges are regulated by the NRC, is in accordance with the definition of pollutant in the permit regulation, 9 VAC 25-31-10, excluding radioactive substances.

39. Clean Water Act Section 316(b)
One comment was received requesting the best professional judgment basis dictate the permittee install a 2-mm mesh size and 0.5fps intake for the existing two units.
Staff Response:

Federal Courts recently remanded EPA's Phase II language addressing Section 316(b) of the Clean Water Act; North Anna Power Station would have been subject to this language since it is an existing facility. The draft permit contains language requiring Dominion to continue collecting data and analyzing it to assure protection of aquatic life from impingement and entrainment as intended by Section 316(b). The permit can be reopened to address compliance with the Clean Water Act Section §316(b) should EPA promulgate revised regulations addressing 316(b).

40. Uprating of Power Plant

One comment was received stating DEQ's statement "operating parameters for Units 1 and 2 have not changed since 1973" does not appear to be correct citing NRC correspondence that NAPS was uprated by 4.2% in 1986 and as such the heat rejection calculation is incorrect.

Staff Response:

The commenter is correct in that the Power Station did receive a license amendment in August 1986 from the Nuclear Regulatory Commission (NRC) to increase the rated core power for each unit. The project was specifically assessed in the 1986 Section 316(a) Demonstration submitted to DEQ related to the thermal discharge study. While the uprate may be considered a change in actual operating parameters, the 1986 NRC approval for the uprate indicates that their approval is made without violating any design criteria or safety limits. The design parameters have not changed since operation of the station began. The operating parameters have changed to move closer to the design parameters approved by NRC.

A clarification to address the commenter's point has been added to Attachment 10 of the Fact Sheet.

41. VPDES Monitoring Program Must Begin at the End of the Discharge Canal

Comments were received stating that the VPDES monitoring program must begin at the end of the discharge canal since the cooling lagoons are national waters.

Staff Response:

The effluent limits in the permit are to assure proper operation of treatment units and for the protection of Lake Anna, not the protection of the WHTF. It is appropriate for the monitoring to be at outfalls and at the end of the treatment facilities. The end of the discharge canal is the beginning of the treatment within the WHTF.

42. Sampling at Discharge Canal and Recording Frequency

One comment was received indicating the statement "Measurements shall be taken at the discharge canal prior to entering the WHTF" is incorrect and should be removed and the frequency of the calculated and recorded data should be 1/H and not 1/D as indicated.

Staff Response:

The statement is correct as is the frequency of the calculated and recorded data. The draft permit requires the calculation of the maximum effluent value for heat rejection for each day. Reporting only the maximum heat rejected calculated value on the Discharge Monitoring Report (DMR) demonstrates compliance with the permit requirement. Under Part II.D of the permit, the hourly information can be obtained by DEQ staff if necessary. No changes were made to the draft permit.

43. No Mention of *E. coli* or Fecal Monitoring

One comment was received questioning the lack of *E. coli* or fecal monitoring at Outfall 111.

Staff Response:

The wastewater treatment facility at the Power Station uses chlorination for disinfection. Chlorine residual is used as a surrogate for bacterial analysis. Monitoring at numerous sewage treatment plants (STP) has concluded that a Total Residual Chlorine (TRC) residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. The draft permit requires *E. coli* analysis if an alternate means of disinfection, such as ultraviolet radiation, is used. The Water Quality Standards were changed in January 2003 from Fecal Coliform to *E. coli* for monitoring of wastewater discharges.

44. Use of *E.coli* or Fecal Coliform as the Quantity to Be Measured

One comment was received about the DEQ's use of *E. coli* or Fecal Coliform as the quantity to be measured and why in one VPA permit Fecal Coliform was the standard and in draft permit *E. coli* is used.

Staff Response:

The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria: *E. coli* bacteria per 100 ml (N/100mL) of water shall not exceed the following:
Geometric Mean[1] Single Sample Maximum
126 235
[1]For two or more samples [taken during any calendar month].
When treated wastewater effluent is land applied, rather than discharged, through a VPA permit, the Sewage Collection and Treatment Regulations at 9 VAC 25-790-880F require Fecal Coliform counts.

45. Incorrect Units
One comment was received indicating the units used for reporting *E. coli* (126 n/100 ml) in the draft permit are incorrect and the correct units for reporting *E. coli* should be 126 cfu/100ml.
Staff Response:
Either convention is correct for reporting *E. coli* results where N=number of colonies counted and cfu=colony forming units counted.

46. Request for *N. fowleri* Monitoring
One comment was received requesting *N. fowleri* be measured.
Staff Response:
DEQ received a letter from the State Health Commissioner in September 2005 that discussed *N. fowleri* in ambient and warm waters, its health effects, its presence in ambient and warm waters, and relative health risks. The commissioner did not recommend any sampling to DEQ.
Staff has no reason to believe the presence of *N. fowleri* in Lake Anna is any different than that in other ambient waters and monitoring for it is not necessary. As for monitoring within the WHTF, that is a matter for Dominion to consider since they allow adjacent residents to access and use the facility for recreation.

47. Request for Better Definition of Water Box
One comment was received requesting a better definition of water box and if this is a common location for both units or is there a separate one for each unit and if separate, will both be added for the total sum of heat rejected.
Staff Response:
The intake and discharge temperatures for each unit will be the temperatures of the condenser circulating water inlet and outlet waterboxes, collected in intervals and averaged for each hour. These points adequately represent the temperatures associated with heat rejection to the WHTF because no significant circulating water heating or cooling loads occur outside the main condensers.

48. Heat Rejection Delta
One comment was received stating the heat rejection calculation has a ?T rather than ?T.
Staff Response:
When the draft permit is converted from word to PDF format, the “?” or delta symbol is replaced with a question mark. The final version of the permit will have “?.”

49. Increase in Monitoring Frequency at Outfall 020
One comment was received questioning the increase in monitoring frequency to 2/M for Outfall 020 and if there were any past violations with warning letters issued.
Staff Response:
Staff reviewed the current permit and the draft permit. The frequency of analysis is 2/M in both permits. There are no changes to document and there have not been any violations from this outfall during the current permit term.

50. Need for Increase in Monitoring
One comment was received stating an increase in the frequency of monitoring is needed to protect aquatic habitats and the health of people using the lake for recreation.
Staff Response:
The proposed monitoring frequencies in the draft permit were selected based on the nature of the discharge as well as the compliance history of the facility. The permit was prepared in accordance with state and federal

regulations and applicable practices and guidance.

51. Monitoring by Outside Sources
One comment was received stating there is no outside monitoring of water conditions, either by Federal, State or contract agency, to insure compliance with the variance and that the variance allows Dominion to be the sole monitor of its compliance and requires only an annual report on how well they are complying.
Staff Response:
The VPDES is a self-monitoring program for all facilities permitted through 9 VAC 25-31-10 et seq. DEQ performs inspections and sampling at permitted facilities to assess compliance with effluent limitations and special conditions set forth in each facility's VPDES permit. When problems are noted, DEQ has an enforcement program to address non-compliance.

52. Reduction in Monitoring and Storm Water Monitoring
Comments were received expressing the following concerns:
- a reduction in monitoring in the draft permit versus monitoring in place in the current permit;
- relaxed monitoring at Outfalls 014, 022, 023, 024, 025 and 026 to quarterly visual exams of storm water quality; and
- if problems are encountered, effluent monitoring frequency should be increased and a plan for remediation given to DEQ within 14 days.

Staff Response:
The outfalls with monitoring frequency reductions in the draft permit are internal outfalls that discharge infrequently, are minor, and have significant dilution in the WHTF. The storm water discharges are from areas with little industrial activity. Outfall 001 continues to have weekly and monthly monitoring requirements. Staff may grant reductions in the frequency of analysis based on the history of permit compliance by the permittee. Dominion has not reported any permit limit violations during the past three years. DEQ's staff has also inspected the facility annually with no deficiencies noted in the facility's environmental operations.

53. Other Than Trace Amounts
One comment was received stating that throughout the outfall discussions, "other than trace amounts" is used and unless trace amounts can be quantified it should be removed.
Staff Response:
There is no approved analytical technology to quantify foam in effluent, so a narrative statement and description is utilized to control foam. The language used in the draft permit is the same as that in all VPDES permits.

54. Quantification Levels
One comment was received questioning if quantification levels concern toxic measurements.
Staff Response:
Quantification level is the lowest standard in the calibration curve for a given analyte. Specific quantification levels (QLs) are necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation of a water quality standard.

55. Removal of Analytical Methods
One comment was received questioning why other analytical methods in the previous permit were removed.
Staff Response:
On March 12, 2007, the Final Rule for 40 CFR Part 136 that establishes approved test procedures for pollutants under the Clean Water Act was published in the Federal Register. In Virginia, the effective date of this regulation is September 12, 2007. Over 100 EPA methods were withdrawn and many new or revised methods were added in the March 12, 2007 publication. The draft permit was edited to account for the changes.

56. Clarification Requested on "a above"
One comment was received requesting clarification as to a statement in Part I.B.3.c regarding a reference to "a.above."
Staff Response:

Staff concurs that clarification is needed. Part I.B.3.c of the draft permit has been modified to read "any single datum required shall be reported as <QL if it less than the QL provided in Part I.B.2.a above."

57. EPA Reopener Clause
One comment was received questioning why the EPA reopener clause was removed from the draft permit.
Staff Response:
The EPA Reopener Clause special condition was redundant to Part II.L. of the VPDES permit which requires compliance with Section 307(a) of the Clean Water Act. Part II.L. allows the permit to be revoked and reissued or modified to comply with Section 307(a).

58. Original 316(a) Study
One comment was received that Part I.E.13 should include a reference to "The Environmental Study of Lake Anna and the Lower North Anna River" and that it should be in the permit documentation.
Staff Response:
Staff believes that the current language in Part I.E.13 of the draft permit is succinct, clear, and sufficient.

59. Request for Additional Station
One comment was received requesting that an additional station be added at the dam or the Dike 3 measurement be moved to the dam.
Staff Response:
DEQ staff has reviewed the station locations that Dominion utilizes for the Annual Report for the 316(a) variance. Staff believes that the current monitoring locations are sufficient and that no additional locations are warranted.

60. Flow at Dike 3
One comment was received indicating the flow at Dike 3 should read "under Dike 3" not "over Dike 3".
Staff Response:
Dike 3 is approximately 2000 feet in length and includes concrete structures through which water from the Waste Heat Treatment Facility (WHTF) is discharged into Lake Anna. There are six potential submerged openings through which the water can flow. Stop log sections are used to maintain velocity through the openings for mixing of outflow from the WHTF to Lake Anna. Staff believes the proper language should read flow "through Dike 3". The Fact Sheet and draft permit have been modified to reflect this change.

61. Hourly Temperatures
Comments were received requesting to refine measurement criteria to report hourly temperatures at Dike 3 (Outfall 001) to DEQ and to publish on a public accessible web site such as DEQ, USGS or Dominion.
Staff Response:
Staff does not believe another temperature monitoring station is needed at Outfall 001; there are already two in proximity to 001, one in the WHTF and one in the lake. Further, staff does not see the need to require a reporting regime different than that used in all other VPDES permits.

62. Results Not Supported by Data
One comment was received countering that the statement "data are consistent with historical trends and indicate that water quality in Lake Anna continues to be capable of supporting a health fishery" is not supported by the data.
Staff Response:
The evaluation of the fish populations has demonstrated that Lake Anna is a healthy, viable fishery. The annual surveys and reports, reviewed by both DEQ and DGIF, show no impairments in the aquatic community. The low dissolved oxygen concentrations noted during one of the 2005 sampling events and referenced by the commenter do not seem to have a measurable effect on the overall health of the fish populations.

63. Typo in Part II.B.1.a
One comment was received indicating a typographical error in Part II.B.1.a of the draft permit.
Staff Response:

Staff concurs and the typographical error has been corrected.

64. Incorrect Maximum Flow

One comment was received indicating the maximum flow of 2708 MGD shown in Section 10 – Table 1 of the draft Fact Sheet is incorrect and the correct flow should be 2785 MGD. The 2785 MGD value is based on a statement from the NRC (NUREG-1811, SDEIS July 2006) that "The existing cooling water system for the NAPS units 1 and 2 is a once through design that withdraws water from the Lake Anna reservoir. At maximum capacity Units 1 and 2 withdraw 1,934,300 GPM (2785 MGD)."

Staff Response:

The 2708 MGD maximum flow shown in the draft Fact Sheet is obtained from the Discharge Monitoring Reports (DMRs) submitted by the facility from 2002 – 2006. The 2785 MGD maximum flow is based on design parameters for units 1 and 2 and is not representative of day to day operational conditions.

65. Ambient Water Quality Data and LACA Data

Comments were received indicating that Section 15.a of the Fact Sheet and Attachment 6 should include some reference to DEQ, Lake Anna Civic Association (LACA) and Dominion water quality data with reference to the web site. The comments also noted that the data in Attachment 6 was not complete.

Staff Response:

Historically, DEQ has not used citizen monitoring when doing the 305(b) assessments. Citizen monitoring stations are listed in Table 2 in the Fact Sheet for informational purposes.

The water quality monitoring data included in Attachment 6 provides some of the available data set for the lake, but is not meant to be all encompassing. A reference to the DEQ website shall be added to the Fact Sheet as suggested by the commenter.

66. Priority Pollutant Table

One comment was received questioning what happened to the reference table of 126 priority pollutants as in the previous permit.

Staff Response:

Appendices A and B were inadvertently omitted from the documents placed on the website, but are included in the draft permit. Appendix A is the listing of the 126 priority pollutants.

67. Engineering Calculations vs. Monitoring

One comment was received questioning the reasoning for the 126 priority pollutants at Outfall 105 being reduced to determination by engineering calculations versus testing.

Staff Response:

40 CFR Part 423.13, Steam Electric Power Generating Point Source Category Regulation, allows the permittee to demonstrate that the concentration of the 126 priority pollutants is non-detectable using engineering calculations when approved 40 CFR Part 136 methods are not capable of detecting the pollutants. If the concentration is non-detectable, there is no reasonable potential to exceed the water quality criteria and have an in-stream excursion.

68. Retention Time in Cooling Lagoons

One comment was received indicating the retention time of 7.5 days as provided in the Fact Sheet has never been measured and does nothing for the permit and should either be accurately measured or removed.

Staff Response:

Retention time is a calculated value based on the volume of the cooling lagoons and the volume pumped (flow rate) through the cooling lagoons. According to estimates provided in the Lake Anna Cooling Model (developed by the Massachusetts Institute of Technology), the cooling water residence time in the WHTF is approximately 14 days with eight pumps running. A retention time of 7.5 days is a conservative estimate based on the variability of plant operating conditions as retention time will vary inversely with flow rate.

69. Total Residual Chlorine (TRC)

One comment was received questioning the TRC limit of 0.011 mg/l and the detection limit of 0.1 mg/l and stating it does not make sense that water quality criteria are based on a value that cannot be measured.

Staff Response:
The permittee must use approved analytical methods presented in 40 CFR Part 136 as well as insuring that the appropriate holding times are met for each parameter. Water Quality Criteria values and effluent limitations are calculated based on toxicity studies and statistical analysis that do not account for the available analytical technology for a given parameter. Approved methods for Total Residual Chlorine do not have quantification levels that can achieve the statistically calculated value.

70. Permittee Temperature Data
One comment was received suggesting the permittee fill in missing 2006 temperature data from monitoring stations NALINT and NSLHIST by estimating based on historical data.
Staff Response:
It would be inappropriate for the permittee to estimate missing data.

71. Evaporation
One comment was received stating evaporation exists and that it has a big effect on both the lake and downstream.
Staff Response:
Staff concurs that evaporation has an effect on both the lake and streams.

72. DEQ to Meet with Citizens
One comment was received asking the SWCB to direct DEQ to sit down with Dominion, concerned citizens and users of the lake to work something out.
Staff Response:
Staff has met with concerned citizens on multiple occasions throughout the past two years. If the SWCB wishes for DEQ, Dominion, and outside parties to meet, it is the Board's prerogative to so require staff to hold such a meeting.

73. Comment on Statements Made at Public Hearing
Two comments were received about statements made at the hearing.
- Temperature Recorders - One comment was received regarding staff comments at the public hearing, specifically the comment that "six continuous temperature recorders are used at each of eleven locations to record hourly temperatures" – are we saying that at each of eleven locations six temperature recorders are in place.
- Date of Permit Issuance – One comment was received questioning comments made on behalf of the permittee specifically the date of issuance of the first VPDES permit stating "Ms. Faggart should get her facts straight as first permit was issued in 1977 not 1997."
Staff Response:
There were transcription errors in the initial copy of the public hearing transcript provided by Dominion. DEQ staff reviewed the audio tapes of the hearing and the correct statements should read: "fixed continuous temperature recorders are used at each of eleven locations to record hourly temperatures," and "the first permit was issued in 1977."
These corrections have been provided to Dominion so the transcript can be corrected.

74. Presentation of Comments to SWCB and U.S. EPA
Comments were received suggesting:
- that all comments be presented to the SWCB and U.S. EPA rather than a summary and that summarized comments alone will not present the true issues that must be addressed; and
- comments received from organizations should be given more emphasis than those received from single individuals.
Staff Response:
It is common practice for staff to prepare a summary of comments for ease of reading. SWCB members know that the original comments are available to them should they want them.
It is not staff's practice to weigh responses from any individual or organization, but to present all comments received in a fair and equitable manner.

75. Request to Delay Public Comment Period Until U.S. EPA Responds to Friends of Lake Anna
Comments were received asking DEQ to extend the public comment period until the U.S. EPA responded to:
- questions from the Friends of Lake Anna dated October 2, 2006, and June 24, 2007; and
- DEQ memo DEQ-05-079F.
Staff Response:
The U.S. EPA responded to the Friends of Lake Anna on July 13, 2007 and since EPA's comments did not conflict with the draft permit, staff believes a reasonable amount of time remained for any additional comments to be submitted prior to the close of the public comment period on August 2, 2007.

76. Request to Delay Public Comment Period Due to Incorrect E-mail
One comment was received requesting DEQ to delay the public comment period due to an incorrect e-mail address for submitting comments that ran in *The Central Virginian.*
Staff Response:
The e-mail address included in the official public notice provided to both *The Free Lance Star* and *The Central Virginian* was correct. Both newspapers provided a copy of the published public notice along with a verification statement of publication.

77. Request to Delay Public Hearing
One comment was received requesting the public hearing be delayed until the U.S. EPA rules on whether the cooling lagoons are waters of the U.S.
Staff Response:
The public hearing was held on July 18, 2007, as advertised. DEQ would not have advertised the draft permit if EPA had an objection to DEQ's approach to the draft permit.

78. Request to Delay Determination
Comments were received requesting the SWCB to postpone any determination on the permit until the legal question regarding ownership and applicability of the Clean Water Act is resolved.
Staff Response:
Staff intends to process the permit application as quickly as possible in accordance with the VPDES Permit Regulation.

79. Inherent Dangers of Nuclear Power and its Effect on Property Values
Comments were received concerning the dangers of nuclear power and another stated that if waters on the "warm side" continue to be unmonitored, and are allowed to continue to heat to higher temperatures, the possibility of a catastrophe, such as an epidemic, is very real, resulting in the plummeting of recreational revenues and property values.
Staff Response:
These issues are outside the realm of the Permit Regulation and are not part of the reissuance of the permit. The Permit Regulation does not authorize staff to assess or account for impacts other than water quality.
Nonetheless, it should be noted that the permit does not convey any rights, nor does it exempt the applicant from federal and local ordinances and requirements.
The permit has been prepared in accordance with all applicable regulations including the water quality standards that require the protection of the beneficial uses of the lake.